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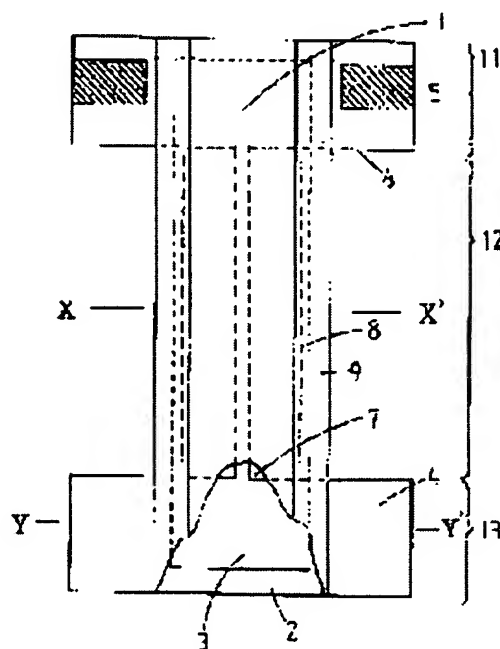
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(54) DISPOSABLE DIAPER

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a disposable diaper which is effective for preventing side leak and stuffiness, has good absorbency, and can save cost.

SOLUTION: In a disposable diaper which has a liquid permeable surface sheet 1 of wide width, a liquid impermeable back surface sheet 2 of narrower width than the surface sheet 1, an absorber 3 placed between these sheets, side flaps 4 extending outwards from both longitudinal side edges of the absorber 3, and a pair of elastic gathers 9 formed near both side edges of the absorber 3, the side flaps 4 are formed by parts where the surface sheets 1 and 2 extend outwards from both longitudinal side edges of the absorber 3, cut lines are formed from the side edges to the vicinity of the absorber 3 around the boundary between the back side parts and the inside leg part 12 of the side flaps 4 and around the boundary between the front side part and the inside leg part 12 of the side flaps 4, and the side leg part is folded back on the absorber 3 so that the inside leg part 12 contacts the absorber 3.



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CLAIMS

[Claim(s)]

[Claim 1] The double-width surface sheet of liquid permeability, and the rear-face sheet of liquid impermeability narrower than said surface sheet. In the usage **** diaper which has the solid gathers of the pair formed the absorber arranged among both [these] sheets, the side flap which extends outside from the longitudinal direction edges on both sides of an absorber, and near the edges on both sides of an absorber Said side flap is formed of the part into which said surface sheet extends outside from the longitudinal direction edges on both sides of an absorber. So that the clinch part may touch [the side flap of a length-from-the-crotch-to-the-cuff part] an absorber by applying and cutting deeply near the absorber from a side edge near the boundary of the back of a side flap, and the length-from-the-crotch-to-the-cuff section, and in near the boundary of an antinode flank and the length-from-the-crotch-to-the-cuff section, and forming a line The usage **** diaper characterized by being turned up at the absorber side.

[Claim 2] The side flap by which said surface sheet and the length-from-the-crotch-to-the-cuff part were turned up is a usage **** diaper according to claim 1 characterized by for the field located on an absorber being a hydrophilic property, and the field located outside from an absorber flank being hydrophobicity.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] It is related with the usage **** diaper which it is effective for horizontal leakage and MURE prevention in more detail, and diffusibility is good, and can plan cost reduction about a **** diaper using this invention.

[Description of the Prior Art]

[0002] The usage **** diaper which is one of the absorptivity goods has from the former composition which has arranged the absorber which consists of a curdy pulp and superabsorbency polymer etc. between the top sheet of liquid permeability, and the backseat of liquid impermeability. Excrement is absorbed by the absorber through a surface sheet. In this case, an absorber needs to hold excrement for reception and the skin, without soaking again. Although what is independent about what mixed the superabsorbency polymer to curdy pulp as an absorber, or carried curdy pulp on it is known, rate of absorption is slow and the return (following, wet back) of the excrement from an absorber to a front face is also still larger. When such an absorber is used, displeasure is given to a user and, in the case of the suckling, it has become also with a cause infected with the skin.

[0003] In order to solve these points, various proposals are made, but in order to improve the trouble of a rate-of-absorption fall in it, there are some as which preparing a second sheet between a top sheet and an absorber is proposed. For example, using the sheet (JP,60-198152,A) which consists of the network-like structural member (JP,59-2280001,A) and the hydrophilic synthetic fiber which consist of a canal elastic firing object, and thermofusion fiber, the fiber set layer (JP,63-220867,A) which each fiber welds at a crossing and maintains a web gestalt as a second sheet is proposed. However, although improvement in rate of absorption and the wet back have effectiveness, since the material which is different from a surface sheet in order to form a second sheet is needed, many materials are needed and a manufacturing cost goes up the diaper represented by these. Moreover, since the side flap is excised in order for most diapers generally known to narrow width of face of the length-from-the-crotch-to-the-cuff section a sake [on the fit disposition of length from the crotch to the cuff], a material becomes useless. Moreover, a side flap is the bank, MURE which becomes empty, and a cone, without absorbing sweat, since a rear-face sheet and a surface sheet are stuck and the absorber is not arranged at the surface sheet bottom. Furthermore, in **** of the wearer at the time of wearing, since the side flap of an antinode flank and the back laps, MURE produces it more. Although the well-known moisture permeability film may be used for a rear-face sheet as MURE prevention, slight effectiveness remains for accepting.

[0004]

[Problem(s) to be Solved by the Invention] In view of this situation, as for this invention persons, a side flap is formed from a surface sheet. Furthermore, apply and cut deeply near the absorber from a side edge near the boundary of the back of a side flap, and the length-from-the-crotch-to-the-cuff section, and in near the boundary of an antinode flank and the length-from-the-crotch-to-the-cuff section, a line is formed, and it sets into a length-from-the-crotch-to-the-cuff part. It is effective for horizontal leakage and MURE prevention, the amount of materials to which diffusibility is good and needed for manufacture decreased, and the diaper turned up so that the clinch part may touch an absorber found out that cost reduction could be planned.

[0005] The purpose of this invention is effective for horizontal leakage and MURE prevention, and its diffusibility is good, and it is to offer the usage **** diaper which can plan cost reduction.

[0006]

[Means for Solving the Problem] The rear-face sheet of liquid impermeability narrower than the double-width surface sheet of liquid permeability, and said surface sheet in this invention, In the usage **** diaper which has the solid gathers of the pair formed the absorber arranged among both [these] sheets, the side flap which extends outside from the longitudinal direction edges on both sides of an absorber, and near the edges on both sides of an absorber Said side flap is formed of the part into which said surface sheet extends outside from the longitudinal direction edges on both sides of an absorber. Near the boundary of the back of a side flap, and the length-from-the-crotch-to-the-cuff section, and in near the boundary of an antinode flank and the length-from-the-crotch-to-the-cuff section, apply and cut deeply near the absorber from a side edge, and a line is formed, and the side flap of a length-from-the-crotch-to-the-cuff part so that the clinch part may touch an absorber It is the usage **** diaper characterized by being turned up at the absorber side. Furthermore, the field where the side flap by which, as for this invention, said surface sheet and the length-from-the-crotch-to-the-cuff part were turned up is located on an absorber is a hydrophilic property, and is the usage **** diaper with which the field located outside from an absorber flank is characterized by being hydrophobicity.

[Embodiment of the Invention]

[0007] The side flap is formed of the part into which, as for the usage **** diaper of this invention, a surface sheet extends outside from the longitudinal direction edges on both sides of an absorber, and in the length-from-the-crotch-to-the-cuff section, the side flap is arranged so that the part turned up and turned up at the absorber side may touch an absorber. In this case, as for the side flap by which the surface sheet and the length-from-the-crotch-to-the-cuff part were turned up, it is desirable for the field located on an absorber to be a hydrophilic property, and for the field in which it is located outside from an absorber flank to be hydrophobicity. By considering as such a configuration, the usage **** diaper of this invention In order that the turned-up side flap section may be located in the surface sheet bottom and may act as a diffusion sheet, Since the urine which has passed the surface sheet is quickly spread in an absorber, good absorptivity ability is obtained, and the horizontal leakage from the side edge section of a length-from-the-crotch-to-the-cuff part is prevented and the side flap section is further formed with the surface sheet, The permeability of an antinode flank and the waist side edge

section of the back becomes good, and MURE can be prevented.

[0008] The hydrophilic property or the hydrophobic nonwoven fabric with which the surface sheet used for this invention consists of polyester, polypropylene, etc., and textile fabrics are used. Moreover, a natural fiber is sufficient and it can manufacture from the ingredient of large range, such as combination of a synthetic fiber and a natural fiber. Anyway, since a surface sheet is a part in contact with the direct skin, it is soft, the touch should be just good, and it should just be permeability. Since the side flap turned up at the central field [of a surface sheet] and absorber side of a length-from-the-crotch-to-the-cuff part is arranged on an absorber, it is desirable that form for hydrophilic fiber or hydrophilization processing is carried out so that liquid can be made to penetrate promptly. Moreover, as for the lengthwise direction both-ends field of a surface sheet, and the field of an absorber flank to an outside, it is desirable that it is water repellence as the liquid absorbed by the absorber does not ooze out from an absorber to an outside. Moreover, a surface sheet does not need to consist of single sheets and may consist of sheets of two or more sheets, such as a center-section surface sheet and a flank surface sheet. Moreover, in case a surface sheet is constituted from a sheet of two or more sheets, although each sheet may use another material, the same material is sufficient as it. The part arranged on an absorber also in this case is a hydrophilic property, and, as for the part arranged outside from an absorber flank, it is desirable that it is water repellence.

[0009] The rear-face sheet used in this invention consists of a material which has stuck textile fabrics or a nonwoven fabric on liquid impermeable films, such as polyethylene, and a liquid permeability film, there is especially no limit and the moisture in an absorber should not just ooze out on the diaper outside. Moreover, in order to give a blanket-like appearance, embossing processing may be carried out at the shape of a pattern, or lusterless finishing may be carried out further. Moreover, when using a film, though it is impermeability, it is desirable from using the well-known moisture permeability film which makes only a steam penetrate, and preventing MURE.

[0010] The absorber used for this invention is made from the well-known absorptivity ingredient usually used for the absorptivity goods of a conventional usage **** diaper and conventional others. That is, it is formed from the monolayer or the multilayer mat which consists of absorptivity fiber, such as curdy pulp and rayon, and is further covered with the hydrophilic sheet. And a high absorptivity polymer is arranged by homogeneity into each mat, and is arranged in the shape of a layer between mixing or each mat. Or thermocompression bonding of 3 - 60% of the weight of the heat welding nature matter may be mixed and carried out to curdy pulp. It is a thing with a fiber length of 5mm or less obtained as curdy pulp by ****(ing) a chemical pulp sheet or a mechanical pulp sheet with a grinder. As a pulp raw material, not only a needle-leaf tree but a broad-leaved tree, straw, a bamboo, a kenaf, etc. are applied. Although the amount of this pulp used differs by whether it uses independently, or two or more laminatings are carried out and it uses with the target absorber, or other absorbers are used together, generally it is 50-400g/m².

[0011] As a high absorptivity polymer, a starch system, a cellulose system, and a synthetic polymer system are mentioned. Namely, the saponification object of a starch acrylic-acid (salt) graft copolymer and a starch ethyl-acrylate graft copolymer. The saponification object of a starch METAKURU acid methyl graft copolymer, the saponification object of a starch acrylonitrile graft copolymer, The saponification object of a starch acrylamide graft copolymer, the saponification object of a starch acrylonitrile 2-acrylamido-2-methyl-propane-sulfonic-acid graft copolymer, Although the polyethylene oxide over which the bridge was constructed with the acrylic-acid (salt) polymer and the acrylic acid, the bridge formation object of sodium carboxymethylcellulose, the bridge formation object of a poly vinyl alcohol maleic-anhydride reactant, etc. are illustrated Among these, the urine, the body fluid, and water of 20 times or more of a self-weight are absorbed, and the thing of a sodium polyacrylate system is the most suitable from the point of absorptivity ability. the amount of the high absorptivity polymer used -- the curdy pulp 100 weight section of dryness -- receiving -- the 10 - 500 weight section -- it is the 15 - 300 weight section preferably, and the high absorptivity polymer of this amount is substantially distributed over curdy pulp at homogeneity. When a high absorptivity polymer absorbs and it swells, it is rare for a mutual interference to be able to minimize the particle, to contact continuously, and to form a permeability barrier, and it penetrates and absorbs urine and body fluid in the direction of a three dimension.

[0012] In this invention, solid gathers are formed by the band-like sideseat of another member with a surface sheet and a rear-face sheet.

[0013] The materials of a sideseat may be films of liquid impermeability, such as a hydrophilic property or a hydrophobic nonwoven fabric, textile fabrics, and porous plastic film, and such lamination, the bicomponent fiber which consists of two or more components, such as polypropylene, polyethylene, polyester, nylon or polyester, polypropylene, polyethylene, and nylon, is sufficient as the configuration fiber of textile fabrics and a nonwoven fabric, and especially, although the bicomponent fiber of polyester/polyester, polyester / polyethylene, and polypropylene/polyethylene is desirable from a strong field, especially a limit is not received.

[0014] The thing of the shape of the shape of yarn which the flexible elastic body used by this invention becomes from nature, synthetic rubber, urethane, etc., and a string, and a flat tip configuration is used according to an installation location. Arrangement of an elastic member is fixed to a sheet by adhesives.

[0015] As adhesives used by this invention, although hot melt adhesive is used advantageously, water-soluble pastes, such as a starch system or CMC (carboxymethyl cellulose), or fluid high adhesives can be used.

[0016] The configurations of the absorber used for this invention should just be configurations in which there is especially no limit and length from the crotch to the cuff is made to fit, such as a sandglass mold, a rectangle, and a T character mold.

[0017]

[Example] Hereafter, although a drawing explains the usage **** diaper of this invention concretely, this invention is not limited to these. drawing 1 -- some usage **** diapers of this invention -- it is a notching top view. In drawing 1 The surface sheet 1 of liquid permeability [diaper / usage ****], and the rear-face sheet 2 of liquid impermeability, The absorber 3 arranged among both [these] sheets. and the side flap 4 formed in the part into which the surface sheet 1 extended in the back 11 and the antinode flank 13 of a diaper. It is formed from the solid gathers 9 arranged along with the longitudinal direction edges on both sides of a diaper. Moreover, the part of the length-from-the-crotch-to-the-cuff section 12 inside the slitting line 6 of the side flap 4 is turned up at an absorber side, and it is arranged between the surface sheet 1 and the absorber 3 so that the clinch section 7 may touch an absorber 3. Moreover, in a drawing, although the slitting line 6 of the side flap 4 is a straight line, as long as it is the configuration which fits the circumference of a foot, it may be a curve.

[0018] Drawing 2 is the sectional view which cut the usage **** diaper shown in drawing 1 along with the X-X' line. In drawing 2, the absorber 3 is arranged on the rear-face sheet 2, and the clinch section 7 of a side flap is arranged between the absorber 3 and the surface sheet 1. Moreover, the solid gathers 9 are formed in the side edge section of an absorber 3 of the sideseat, the flexible elastic body 8 has been arranged in the state of expanding in the free edge of the solid gathers 9, and the free edge has started up in the contraction operation.

[0019] Drawing 3 is the sectional view which cut the usage **** diaper shown in drawing 1 along with the Y-Y' line. In drawing 3, the absorber 3 is arranged between the surface sheet 1 and the rear-face sheet 2, and the side flap 4 is further formed in the part into which the surface sheet 1 extends outside from the side edge of an absorber 3. Moreover, the free edge is joined to the surface sheet 1 on an absorber,

and the solid gathers 9 arranged at the side edge section of an absorber 3 have not started up.

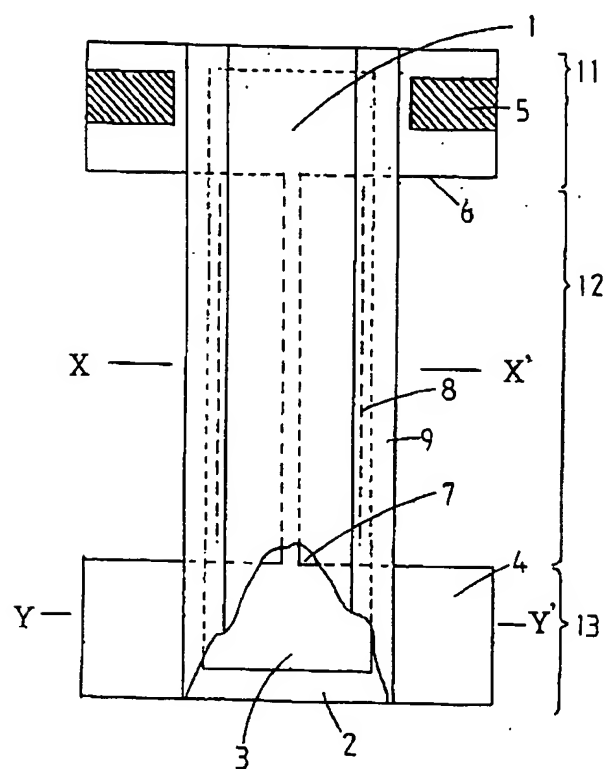
[0020] Drawing 4 is the sectional view which cut the usage **** diaper which drawing 2 shows a different example, and which is shown in drawing 1 along with the X-X' line. In drawing 4, the clinch point field 10 of a side flap is located to the outside of the side edge of the rear-face sheet 2, and the circumference of foot flexible elastic body 14 is further arranged between the side flaps of the clinch point field 10. The circumference of foot flexible elastic body 14 can arrange 1 or two elastic bodies or more a straight-line top or in the shape of a curve. Moreover, when arranging two or more, the mutual elastic body of each other can be arranged in parallel being un-parallel.

[0021]

[Effect of the Invention] As explained above, since the side flap of the back and an antinode flank is formed only with the surface sheet, the usage **** diaper of this invention is effective for MURE prevention. Moreover, in order that the surface sheet which forms a side flap may be turned up on an absorber in a length-from-the-crotch-to-the-cuff part and may work as a diffusion sheet, diffusibility becomes good. it is effective for improvement and leakage prevention of absorptivity, and also the amount of materials required for manufacture is few-quantified, and can plan large cost reduction.

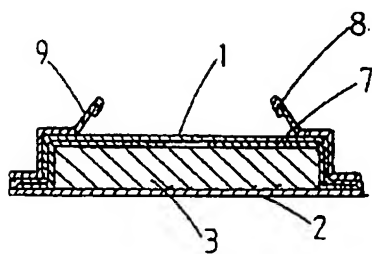
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Drawing selection Representative drawing



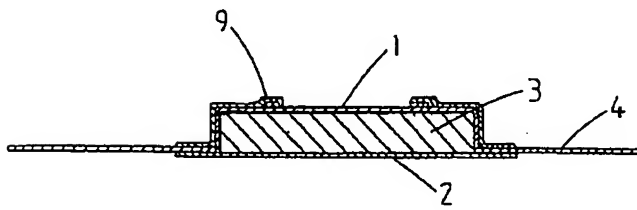
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Drawing selection drawing 2



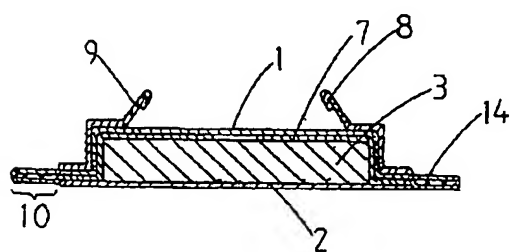
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Drawing selection drawing 3



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Drawing selection drawing 4



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